

15 2240

26650
S/070/61/006/005/008/011
E032/E114

AUTHORS: Zhuravlev, N.N., Stepanova, A.A., Paderno, Yu.B.,
and Samsonov, G.V.

TITLE: X-ray measurements of the thermal expansion
coefficients of hexaborides

PERIODICAL: Kristallografiya, 1961, Vol.6, No.5, pp.791-794

TEXT: The present authors have measured the thermal expansion coefficients in the temperature range 20-800 °C using the Unicam X-ray camera (diameter 190 mm, copper radiation). The specimens were prepared by reduction of the oxides of the corresponding elements by boron. Table 1 gives the thermal expansion coefficient α obtained from measurements on powder X-ray diffraction patterns. In all cases the error in α is between 0.3×10^{-6} and 0.5×10^{-6} deg⁻¹ except for the hexaborides of neodymium and terbium, where the error is 10^{-6} deg⁻¹. The table also gives the values of the lattice constant a at room temperature (20 °C) determined with the precision camera P&Y-114 (RKU-114). Using the data on the thermal expansion coefficients, the authors have calculated the

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X

X-ray measurements of the thermal S/G70/61/006/005/008/011
E032/E114

characteristic temperature Θ , the root mean square amplitude of the thermal vibrations of the complexes, and the melting temperature. Numerical results are reproduced.

The figure shows the lattice constant a of the hexaborides as a function of the atomic radii of the metals. The lattice constant a tends to increase with the atomic radius.

There are 1 figure, 2 tables and 25 references; 20 Soviet and 5 non-Soviet. The English language references read as follows:

Ref.15: E. Felten, J. Binder, B. Post, J. Amer. Chem. Soc., V.80, 3479, 1958.

Ref.17: C.F. Cline, Nature, V.181, 476, 1958.

Ref.21: H. Eick, P. Gilles, J. Amer. Chem. Soc., V.81, 5030, 1959.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova (Moscow State University im. M.V. Lomonosov)
Institut metallokeramiki i spetsial'nykh splavov
AN USSR (Institute of Cermets and Special Alloys,
AS Ukr. SSR)

SUBMITTED: March 10, 1961.

Card 2/4

S/070/62/007/002/017/022
E132/E160

AUTHORS: Zhuravlev, N.N., and Stepanova, A.A.
TITLE: X-ray diffraction studies of the superconducting alloys of bismuth and platinum in the temperature range 20 to 640 °C

PERIODICAL: Kristallografiya, v.7, no.2, 1962, 310-311

TEXT: Powder photographs were taken of specimens of PtBi and PtBi₂ in a Unicam high-temperature camera between 20 and 600 °C. It was found that PtBi keeps the NiAs structure up to 600 °C; that PtBi loses Bi above 300 °C by evaporation; and that there are three modifications of PtBi₂. The coefficients of mean thermal expansion are:

Pt (300-500 °C) $8.6 \pm 1 \times 10^{-6}$;

PtBi (20-600 °C) $\alpha_{\parallel} = 1.9 \pm 0.2 \times 10^{-6}$, $\alpha_{\perp} = 16.4 \pm 2 \times 10^{-6}$;

α -PtBi₂ (20-400 °C) $1.25 \pm 0.1 \times 10^{-6}$;

Bi (20-92 °C) 15.4 ± 1 and $12.8 \pm 1 \times 10^{-6}$.

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X-ray diffraction studies of ...

S/070/62/007/002/017/022
E132/E160

There are 1 figure and 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im.
M.V. Lomonosova
(Moscow State University imeni M.V. Lomonosov)

SUBMITTED: May 24, 1961

Card 2/2

S/089/62/013/002/009/011
B102/B104

AUTHORS: Zhuravlev, N. N., Stepanova, A. A.
TITLE: X-ray determination of thermal expansion coefficients of
manganese and cobalt monosilicides

PERIODICAL: Atomnaya energiya, v. 13, no. 2, 1962, 183-184

TEXT: The thermal expansion coefficients of MnSi (lattice constant $a = 4.558 \pm 0.001 \text{ \AA}$ at room temperature) and of CoSi ($4.447 \pm 0.001 \text{ \AA}$) were determined in the range 20-800°C. The X-ray measurements were made using iron radiation and gave $16.3 \cdot 10^{-6} \text{ deg}^{-1}$ for MnSi, $11.1 \cdot 10^{-6} \text{ deg}^{-1}$ for CoSi, within an error of $1.0 \cdot 10^{-6}$. The measurements of a at 20, 500, 600, 700 and 800°C fitted the $a(T)$ straight line. There is 1 figure.

SUBMITTED: November 16, 1961

Card 1/1

DITMAR, A.N., kand. geogr. nauk, red.; VOSKOBODNIKOVA, S.N.,
kand. geogr. nauk, red.; IVANOV, A.N., kand. geol.-
miner. nauk, red.; ROKHMISTROV, V.L., red.; STEPANOVA,
A.A., red.

[Atlas of Yaroslavl Province] Atlas IAroslavskoi oblasti.
Moskva, 1964. 28 p. (MIRA 18:2)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye geodezii
i kartografii.

ACCESSION NR: APh012284

S/0070/64/009/001/0116/0117

AUTHORS: Zhuravlev, N. N.; Stepanova, A. A.; Shebatinov, M. P.

TITLE: X-ray determination of the coefficients of thermal expansion for monosulfides of La, Ce, Pr, and Nd

SOURCE: Kristallografiya, v. 9, no. 1, 1964, 116-117

TOPIC TAGS: thermal expansion, thermal expansion coefficient, rare earth monosulfide, x ray determination, semiconductor, metallic conductivity

ABSTRACT: The crystals investigated are cubic and have the structure of NaCl. The lattice dimensions, density, interatomic distances, atomic diameter, and thermal expansion for the various sulfides are shown in Table 1 of the enclosure. To obtain the coefficient of thermal expansion the authors took x-ray photographs in a vacuum at various temperatures (from room temperature to 400C), using Cu radiation. They also computed an index Δ , proposed by L. D. Dudkin (Nekotoryye zakonomernosti obrazovaniya poluprovodnikovykh faz v sistemakh s perekhodnyimi metallami. V sb. "Vysokotemperaturnyye metallokeramicheskiye materialy." Izd-vo AN UkrSSR, Kiev, 1962, 87), which characterizes the type of conductiv-

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ACCESSION NR: AP4012284

ity. If $\Delta < 14.5\%$, the compound should have metallic conductivity. If $\Delta > 14.5\%$, then, under certain conditions, the compound may act as a semiconductor. All the studied compounds have Δ less than 14.5% . Orig. art. has: 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 15Apr63

DATE ACQ: 19Feb64

ENCL: 01

SUB CODE: PH

NO REF SOV: 006

OTHER: 001

Cord 2/32

STEPANOV, A.V.; STEPANOVA, A.A.

I-T diagram of the pyrolysis of ethane and propane. Khim i tekhn.
topl. 1 masel 9 no.6:10-14 Je'64 (MIRA 1787)

1. Institut ispol'zovaniya gaza AN UkrSSR.

L 21811-65 EWP(e)/EWT(m)/EWP(w)/EPF(n)-2/EWA(d)/EPR/T/EWP(t)/EWP(b) Ps-4/
Pu-4 AFWL/SSD/IJP(c) JD/JG/AT/WH

ACCESSION NR: AP5001595

S/0226/64/000/006/0083/0084

AUTHOR: Zhuravlev, N. N.; Stepanova, A. A.

TITLE: X-ray determination of the coefficient of thermal expansion
of ScB₂ 18

SOURCE: Poroshkovaya metallurgiya, no. 6, 1964, 83-84

TOPIC TAGS: scandium boride, lattice constant, thermal expansion,
expansion coefficient 27

ABSTRACT: The ScB₂ compound has an AlB₂ typed hexagonal lattice with the parameters $a = 3.14 \text{ Kx}$ and $c = 3.51 \text{ kx}$. The x-ray diffraction analysis of ScB₂ powder at 20 to 600C showed that a and c lattice parameters increased almost linearly with increasing temperature. The calculated mean coefficients of thermal expansion were $6.8 \cdot 10^{-6} \pm 0.5 \cdot 10^{-6}$ and $7.6 \cdot 10^{-6} \pm 0.5 \cdot 10^{-6} \text{ degree}^{-1}$ along the a and c axes, respectively. Orig. art. has: 1 figure.

ASSOCIATION: Moskovskiy gosuniversitet im. M. V. Lomonosova (Moscow State University)

Card 1/2

L 21811-65

ACCESSION NR: AP5001595

SUBMITTED: 17Nov63

ENCL: 00

SUB CODE: IC, TD

NO REF SOV: 005

OTHER: 000

ATD PRESS: 3164

Card 2 / 2

L 32042-66 EWP(e)/ EWT(m)/EWP(t)/ETI IJP(c) JD/JG/AT/WH
(A) SOURCE CODE: UR/0363/66/002/004/0608/0616
ACC NR: AP6013339

AUTHOR: Meyerson, G. A.; Zhuravlev, N. N.; Manelis, R. M.; Runov, A. D.;
Stepanova, A. A.; Grishina, L. P.; Gramm, N. V. 70
B

ORG: Physics Department, Moscow State University Im. M. V. Lomonosov (Fizicheskiy
fakul'tet, Moskovskiy gosudarstvennyy universitet)

TITLE: Some properties of yttrium borides 21 27

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 4, 1966, 608-616

TOPIC TAGS: yttrium compound, boride, work function, thermionic emission

ABSTRACT: The thermionic and crystallographic constants of the borides YB_4 , YB_6 , and YB_{12} were measured, and the behavior of these materials in a vacuum at elevated temperatures was studied. The borides were prepared by the vacuum thermal method by reducing yttrium oxide with boron. YB_4 is indexed in a tetragonal lattice with constants $a = 7.12$, $c = 4.04 \pm 0.05$ Å. YB_6 and YB_{12} are indexed in a cubic lattice with constant $a = 4.102$ and 7.506 ± 0.002 Å, respectively. It was shown that only YB_4 is stable during high-temperature treatment (up to 2750K); YB_6 and YB_{12} decompose to

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UDC: 546.641'271

L 32042-66

ACC NR: AP6013339

form YB₄. The microhardness and strength of the borides decreases in the series YB₄ → YB₆ → YB₁₂. Measurements of the thermionic emission showed that the highest density of the emission current was that of YB₄ (0.284 A/cm² at 1890K). Currents of $9.68 \times 10^{-4} - 2.01 \times 10^{-5}$ A/cm² can be obtained from YB₆ and YB₁₂ on a tantalum substrate at maximum operating temperatures of 1790 and 1730K, respectively. The work function (ϕ_0) increases from 3.2 to 5.31 to 5.36 in the series YB₄ → YB₆ → YB₁₂. The emissive properties depend substantially on the phase composition of the material. In their emissive properties, the yttrium borides studied are substantially inferior to lanthanum hexaboride. Orig. art. has: 8 fig. and 5 tables.

SUB CODE: 11 / SUBM DATE: 16Jun65 / ORIG REF: 007 / OTH REF: 004

Card 2/2

So

ACC NR: AP6036905

(N)

SOURCE CODE: UR/0226/66/000/011/0077/0084

AUTHOR: Manelis, R. M.; Meyerson, G. A.; Zhuravlev, N. N.; Telyukova, T. M.;
Stepanova, A. A.; Gramm, N. V.

ORG: Moscow Institute of Steel and Alloys (Moskovskiy institut stali i spлавov)

TITLE: Some specific features of the synthesis of yttrium and gadolinium borides
and some of the boride properties

SOURCE: Poroshkovaya metallurgiya, no. 11, 1966, 77-84

TOPIC TAGS: yttrium boride, gadolinium boride, chemical synthesis, boride, yttrium,
gadolinium, porosity, hardness, bending strength

ABSTRACT: Yttrium and gadolinium borides were synthesized from respective oxides
with amorphous boron at 1400—2000C in a vacuum of $2-5 \cdot 10^5$ mm Hg. The reaction
 $MeO + 2B \rightarrow MeB + BO$ yielded YB_4 , YB_6 and YB_{12} yttrium borides and GdB_4 and GdB_6
gadolinium borides. Single-phase YB_6 and YdB_6 hexaborides were obtained at 1700C;
at higher temperature they decomposed into tetraborides and boron. Single-phase YB_{12}
compound was obtained at 1600—1700; at higher temperatures it decomposed into
 YB_{602} YB_4 compounds. Yttrium and gadolinium boride powders were then compacted,
sintered in vacuum, and tested. The porosity of yttrium-boride specimens was
22—26%, and that of gadolinium-boride specimens was 30—32%. The microhardness and
bend strength of YB_4 , YB_6 , and YB_{12} was 2850 dan/mm², and 290 dan/cm², 2575 dan/mm²,
and 270 dan/cm², and 2500 dan/mm², and 165 dan/cm², respectively. The microhardness

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ACC NR: AP6036905

and bend strength of GdB_4 and GdB_6 was 1900 dan/mm² and 675 dan/mm² and 1850 dan/mm² and 320 dan/cm², respectively. The boride contained almost no impurities. The most oxidation resistant were gadolinium borides and, among yttrium borides, the YB_{12} compounds. Orig. art. has: 5 figures and 6 tables.

SUB CODE: 13, 11/ SUBM DATE: 12Apr66/ ORIG REF: 008/ OTH REF: 003/

Card 2/2

AMIROVA, S.A.; PECHKOVSKIY, V.V.; KAMEKO, B.S.; STEPANOVA, A.F.

Investigating methods for using pickling solutions. Uch. zap.
Perm. gos. un. 17 no.1:61-72 '60. (MIRA 14:11)
(Metals—Pickling)

SHAFRAN, I.G.; STEPANOVA, A.G.; PANKRATOVA, L.I.

Iodometric determination of thiourea dioxide. Trudy IREA no.25:
215-220 '63. (MIRA 18:6)

NOVIKOVSKAYA, N.A.; STEPANOVA, A.G.; BLINOVA, V.I.

Determination of thiourea and disulfide impurities in thiomene
dioxide. Trudy IREA no.25:252-257 '63.

(MIRA 18:6)

NOVIKOVSKAYA, N.A.; STEPANOVA, A.G.

Determination of chlorine and bromine in organic compounds.
Trudy IREA no.25:311-316 '63. (MIRA 18:6)

"Experimental Investigation of the Effect of Local Warping in Walls on the Vertical Rigidity of Crane Girders." Cand Tech Sci, Leningrad Polytechnic Institute N. I. Kalinin, Min Higher Education USSR, Leningrad, 1955. (EL, No 10, Mar 55)

SC: Sum. No. 670, 29 Sep 55-Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (15)

STEPANOVA, A.I., kand.tekhn.nauk

Some problems in designing crane structures. Sbor VNIIPMASH
no.24:3-22 '59 (MIRA 13:11)
(Cranes, derricks, etc.)

STEPANOVA, A.I., kand.tokhn.nauk

Using the method of limit conditions in designing bridges for
cranes. Vest.mash. 41 no.11:21-25 N '61. (MIRA 14:11)
(Cranes, derricks, etc.--Design and construction)

S/OS/50/00/01/03/05/012
E03/739

AUTHORS: Berezin, I. A. and Stepanov, A. I.

TITLE: On the Problem of Sensitization of Photographic Plates in the Ultraviolet Region of the Spectrum

PERIODICAL: Optika i Spektroskopiya, 1988, Vol. 3, No. 3, pp. 404-410 (USSR)

ABSTRACT: To increase the sensitivity of photographic plates in the far ultraviolet they are frequently coated with luminescent substances. The authors studied such sensitization of photographic plates in the I and III spectral regions (types, micro and macro-plates, Spectrogon, oil, vaseline oil and sodium acetate were used as sensitizers. The results obtained (Fig. 1-4) lead the authors to recommend a 20% solution of sodium salicylate in a 50/50% mixture of water and ethyl alcohol for sensitization of type III photographic plates in the region 2000-2300 Å. The plates are insensitive to the solution for 3 sec and are dried in a desiccator for several minutes. The layer of sodium salicylate which is not be washed off before developing. Sensitized plates do not deteriorate when stored for considerable

Card
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Periods of time.
There are 4 figures and 7 Soviet references.

Card
2/2

SUBMITTED: July 30, 1979

STEPANOVA, A.I.

An FM universal photometer. Tsement 17 no.5:24 S-O '51.(MLRA 9:8)

**1. Shurovskiy tsementnyy zavod.
(Photometers)**

Penicillin, N. S. S. S. S.

Penicillin

Penicillin, a new therapeutic agent. Biol. Zhurnal. russ. zarub, vrachei no,2, 1948.

Monthly List of Russian Acquisitions, Library of Congress, November 1952. UNCLASSIFIED

KRAPIVKO, T.N., inzh.; STEPANOVA, A.I., inzh.

Quality of white and colored cements. TSement 31 no.1:15-16 Ja-F
'65. (MIRA 18:4)

1. Shohurovukly tuomontnyy zavod.

KRASIL'NIKOVA, L.N.; CHEPIK, M.N.; STEPANOVA, A.I.

¹
R~~ad~~ method of determining fluorine in zinc industry products.
Sbor.trud. VNIITSVETMET no.9:37-40 '65.

(MIRA 18:11)

STEPANOVA, A.M.

med ✓ Chesnokov, V. A., and Stepanova, A. M.: Udobreni
rastenii uglekislym gazom (Fertilizing Plants with Carbon
Dioxide). Leningrad: Izdatel. Leningrad. Univ. 1955.
80 pp.

2

CHESNOKOV, V.A.; STEPANOVA, A.M.;

Photosynthesis in cucumbers and tomatoes raised under artificial light.
Trudy Inst.fiziol.rast. 10:73-80 '55. (MLRA 8:9)

1. Kafedra fiziologii rasteniy Leningradskogo gosudarstvennogo univer-
siteta. (Photosynthesis) (Cucumbers) (Tomatoes)

STEPANOVA, A. M.

The absorption of carbon dioxide by plant roots. V. A. Chesnokov and A. M. Stepanova. *Uchenye Zapiski Leningrad. Gosudarst. Univ. im. A. A. Zhdanova* No. 186, Ser. Biol. Nauk No. 39, 73-86(1955).—The absorption of CO₂ by plant roots was studied. A calen. was made of the CO₂ equil. of the roots of corn seedlings placed in a closed system. The influence of different conditions of nourishment by CO₂ on the growth of the corn seedling, cucumber, and kidney bean was investigated. J. M. Widom

2

CHESNOKOV, V.A.; STEPANOVA, A.M.

Photosynthesis in lemons, raised under various light conditions.

Vest.Len.un.11 no.3:129-131 F '56.

(MLBA 9:7)

(Photosynthesis) (Lemon)

STEPANOVA, A. M., Cand Biol Sci -- (diss) "Physiological basis for the fertilization of plants with carbon dioxide." Leningrad, 1960. 20 pp; (Leningrad Order of Lenin State Univ im A. A. Zhdanov); 225 copies; price not given; (KL, 17-60, 148)

CHESNOKOV, V.A.; PINEVICH, V.V.; VERZILIN, N.N.; STEPANOVA, A.M.

Some results of mass culture of unicellular algae. Vest. LGU 15
no.9:29-36 '60. (MIRA 13:4)

(ALGAE)

STEPANOVA, A.M.

Effect of the light factor on the growth and photosynthesis
of *Chlorella*. Vest. LGU 18 no.21:72-85 '63 (MIRA 16:12)

PSHEDETSKAYA, L.I.; CHEREPANOVA, N.F.; STEPANOVA, A.M.

Physiological and ecological characteristics of three strains
of *Phytophthora infestans* de Bary. Vest. LGU 19 no.15:49-53
'64. (MIRA 17:11)

STEFANOVA, A.M.; BARANOVA, A.A.

Use of the products of the photochemical phase of photosynthesis in the absence of carbon dioxide for the nitrate and nitrite reduction by Chlorella cells. Vest. LGU 20 no.21:124-138 '65. (MIRA 18:12)

STEPANOVA, A. N., Cand Tech Sci (diss) -- "Investigation of the operating indexes of the UKSK-2.6 universal corn-silaging combine, and certain problems of the technology of corn harvesting". Tbilisi, 1959. 23 pp (Min Agric Georgian SSR, Acad Agric Sci Georgian SSR), 100 copies (KL, No 9, 1960, 126)

SOV/129-58-11-11/13

AUTHORS: Al'tgauzen, O.N., Zusman, Sh. I., and Stepanova, A.N.

TITLE: Thermomagnetic treatment in vacuum furnaces of magnetically soft alloys with a rectangular hysteresis loop (Termomagnitnaya obrabotka magnitnomyagkikh splavov s pryamougol'noy petley gisterезisa v vakuumnykh pechakh)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 11, pp 60-62 (USSR)

ABSTRACT: In the Institute for Precision Alloys TsNIIChm, a vacuum shaft furnace with spiral heating elements of nichrome and the alloy EI695 was used which made continuous temperature control of the furnace possible, particularly below 700°C. A sketch, Fig.1, shows the arrangement of the magnetising device and of the specimens during thermo-magnetic treatment (design proposed by N. A. Kalmychek, NII MRTP). The high temperature annealing and the thermo-magnetic treatment were effected in accordance with regimes enumerated in a Table, p 62. The magnetic properties of alloys after the thermo-magnetic treatment with fields of various magnitudes are graphed in Fig.2. The high temperature treatment consisted of annealing

Card 1/4 in vacuum at 1100°C for two hours, cooling with a speed

SOV/129-58-11-11/13

Thermomagnetic treatment in vacuum furnaces of magnetically soft alloys with a rectangular hysteresis loop

of 100°C/hr to 600 and 200°C respectively, followed by cooling with the container in air. The thermomagnetic treatment consisted of the following: Alloy 50NP: heating at 600°C for one hour, cooling inside a magnetic field at 50°C/hr to 400°C, cooling by 100°C/hr to 200°C followed by cooling with the container in air; alloy 65NP: heating at 700°C for 4 hours, cooling inside a magnetic field to 200°C with a speed of 100°C/hr, followed by cooling in air with the container; heating to 800°C for one hour, cooling inside a magnetic field with a speed of 100°C/hr down to 200°C, followed by cooling in air with the container (alloy 34NMP). Analysis of the obtained results enables the following conclusions: for all the alloys separate high temperature and thermomagnetic treatment in vacuum can result in obtaining magnetic properties which satisfy the specified technical requirements. The magnitude of the magnetic properties depends to a large extent on the intensity of the field applied during the heat treatment; to obtain a maximum improvement of the magnetic properties it is sufficient for all

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SOV/129-58-11-11/13

Thermomagnetic Treatment in Vacuum Furnaces of Magnetically
Soft Alloys with a Rectangular Hysteresis Loop

the tested alloys to use a magnetic field potential of 10 to 15 Oe. An increase in the magnetic field strength does not result in an improvement of the properties of the alloys. Within the investigated thicknesses the effect of the thermomagnetic treatment is practically independent of the character of the applied field (d.c., pulsating or 50 c.p.s. fields), provided their amplitude values are the same. This conclusion confirms the results obtained by Kelsall (Physics, 1934, Nr 5). For larger thicknesses it is necessary to verify the influence of the surface effect in the case of treatment with an a.c. field. The carried out work has shown that the thermomagnetic treatment of the investigated alloys can be effected in furnaces used for high temperature treatment of these alloys, provided the magnetising circuits are fed with d.c. or a.c. currents.

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SOV/129-58-11-11/13

Thermomagnetic Treatment in Vacuum Furnaces of Magnetically
Soft Alloys with a Rectangular Hysteresis Loop

There are 2 figures, 1 table and 3 references, 2 of
which are Soviet, 1 English.

ASSOCIATION: TsNIICHM

1. Alloys--Heat treatment
2. Alloys--Magnetic factors
3. Alloys--Properties
4. Vacuum furnaces--Performance

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86877

S/105/61/000/001/004/007
B012/B059

24,2200 (1134,1158,1160)

AUTHORS: Al'tgauzen, O. N., Semenova, N. A., and Stepanova, A. N.

TITLE: Effect of Demagnetization and of Time-dependent Drop of
Magnetic Permeability Upon the Latter of Materials for
Magnetic Conductors

PERIODICAL: Elektrichestvo, 1961, No. 1, pp. 51-55

TEXT: In the present paper the authors discuss the effect of demagnetization on magnetic permeability and the effect of a change with time of the magnetic permeability in some magnetically soft materials is discussed. Investigation was carried out with Ni-Fe alloys containing 50 and 65% nickel, alloys with 79% nickel and molybdenum, and alloys with 80% nickel, chromium and silicon (Refs. 1,2,3), furthermore electrotechnical steel containing 4% silicon, cold-rolled steel with 3% silicon, and an iron-aluminum alloy with 16% aluminum. In order to clarify the effect of demagnetization upon the magnetic properties, the latter were determined immediately after heat treatment of samples which never before have been

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Effect of Demagnetization and of Time-
dependent Drop of Magnetic Permeability
Upon the Latter of Materials for Magnetic
Conductors

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B012/B059

in a magnetic field, and then of the same samples after demagnetization through alternating field. Measurements were made with direct current by means of the ballistic method (Ref. 5). The change with time of the magnetic properties was checked at the same samples at various times after demagnetization. Also these measurements were made by the ballistic method. The investigations showed that the increase in permeability on demagnetization is apparently caused by the formation of the magnetic texture, and the drop with time of the permeability by the destruction of the magnetic texture. The physical nature of this phenomenon is still unexplained and the necessity of a proper investigation is pointed out (Refs. 6-12). Because of the observed dependence of the magnetic permeability on pre-demagnetization of the alloys after heat treatment and on the time between end of demagnetization and begin of investigation, the authors call for normalization of the method of determining the magnetic properties of soft magnetic alloys. There are 7 figures, 1 table, and 12 references: 10 Soviet and 1 German.

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Effect of Demagnetization and of Time-
dependent Drop of Magnetic Permeability
Upon the Lateral of Materials for Magnetic
Conductors

S/105/61/000/001/004/007
B012/BC59

ASSOCIATION: TsNIICbM

SUBMITTED: October 2, 1959

Card 3/3

AL'TGAUZEN, O.N.; SEMENCVA, N.A.; STEPANOVA, A.N.

Temporary drop in the magnetic permeability of magnetically
soft alloys. Sbor. trud. TSNIICHM no.25:98-103 '62. (MIRA 15:6)
(Alloys—Magnetic properties)

STEPANOVA, A.N.; GIVARGIZOV, Ye.I.

Effect of alloying on the rate of growth of epitaxial germanium
films. Fiz. tver. tela 5 n.10:3034-3035 0 '63. (MIRA 16:11)

1. Institut kristallografii AN SSSR, Moskva.

GIVARGIZOV, Ye.I.; STEPANOVA, A.N.

Structural imperfections of epitaxial germanium films.
Kristallografiia 9 no.1:127-128 Ja-F '64.

(MIRA 17:3)

1. Institut kristallografi AN SSSR.

ACCESSION NR: AP4012289

S/0070/64/009/001/0127/0128

AUTHORS: Givargizov, Ye. I.; Stepanova, A. N.

TITLE: Structural flaws in the epitaxial layers of germanium

SOURCE: Kristallografiya, v. 9, no. 1, 1964, 127-128

TOPIC TAGS: germanium, epitaxial layer, structural flaw, dislocation, subsurface flaw, surface growth, surface conditioning

ABSTRACT: The influence of a preliminary surface conditioning on the subsequent crystal growth in germanium produced by reducing GeCl_4 in H has been investigated. The apparatus used had been previously described by Ye. I. Givargizov (Fiz. tv. tela, 5, 1150, 1963). Surfaces of germanium crystals were polished in $\text{HF:HNO}_3 = 1:1$ to mirror smoothness. They were then washed and dried at 120°C . Alkaline treatment with liquid containing 6 g of KOH, 4 g of $\text{K}_3[\text{Fe}(\text{CN})_6]$, and 50 ml of H_2O disclosed the presence of numerous holes. Crystal growth was initiated at 650°C after the surfaces were prepared in three different ways. In the first case they were heated in dry H; the epitaxial layer of 70μ was then polished with acid and etched with alkali till it was reduced to 30μ . The density of dislocation was

Card 1/2

ACCESSION NR: AP4012289

found to have increased. In the second case the surfaces were heated to 900C for 30 min. The surfaces were treated as before, and the dislocation density was found to have diminished. In the last case the surfaces were etched at 650C in a mixture of H, GeCl_2 and PBr_3 fumes. After 20 min, during which 6μ of surface was removed, the growth was started. The density of dislocations was found to be the same as in the subsurface, and no concentrations of dislocations were found. The last method may be considered the most successful of the three. The authors thank N. N. Sheftal' for his suggestions and evaluation of the work, and also A. M. Kevorkov and L. N. Obolenskaya for helping with the experiments. Orig. art. has: 3 microphotographs.

ASSOCIATION: Institut kristallografii AN SSSR (Institute of Crystallography AN SSSR)

SUBMITTED: 20May63

DATE ACQ: 19Feb64

ENCL: 00

SUB CODE: PH

NO REF SOV: 003

OTHER: 003

Card 2/2

AL'TERMAN, N.A., kand.meditsinskikh nauk; STEPANOVA, A.P., (Stalino)

"Hygiene; a manual for physicians and students in the Ukrainian language" by R.D.Gabovich, G.Kh. Shakhbazian. Reviewed by N.A. Al'terman, A.P. Stepanova. Vrach. delo no.9:135-138 S '60.

(MIRA 13:9)

(HYGIENE)

(GABOVICH, R.D.)

(SHAKHBAZIAN, G.Kh.)

015/100.1/15
AFANAS'YEVA, T.N.; VVEDENSKIY, S.A.; STEPANOVA, A.S.

Reducing boiling-out time for fabrics by changing the composition
of the solution. Tekst.prom. 17 no.9:34-36 S '57. (MIRA 10:11)
(Textile finishing) (Sodium silicate)

GRECHIN, Boris Vasil'yevich; STEPANOVA, Anna Sergeyevna; BONDARENKO, M.,
red.; ABBASOV, T., tekhn. red.

[Uzbek Karakul sheep]Uzbekistanskaia karakul'skaia ovtsa.
Tashkent, Gosizdat UzSSR, 1961. 29 p. (MIRA 15:11)
(Uzbekistan--Karakul sheep)

STEPANOVA, A.S., starshiy nauchnyy sotrudnik

Packing material for roving and spinning machines. Tekst.prom. 23
no.11:52-56 N '63. (MIRA 17:1)

1. TSentral'nyy nauchno-issledovatel'skiy institut vspomogatel'nykh
izdeliy i zapasnykh detaley k tekstil'nomu oborudovaniyu.

STEPANOVA, A.S., starshiy nauchnyy sotrudnik; SEVOST'YANOV, A.G., doktor tekhn. nauk, rukovoditel' raboty

Studying the coefficient of tangential resistance between the fiber and materials used for packing. Tekst.prom. 25 no.1:74-76 Ja '65. (MIRA 18:4)

1. Tsentral'nyy nauchno-issledovatel'skiy institut vspomogatel'nykh izdeliy i zapasnykh detaley k tekstil'nomu oborudovaniyu (for Stepanova).

BOGOLUB, S.I.; STEPANOVA, A.T.

Mechanism of the effect of hypertonic solutions on the organism.
Nauch. dokl. vys. shkoly; biol. nauki no.1:51-56 '65.

(MIRA 18:2)

1. Rekomendovana kafedroy farmakologii i fiziologii Pyatigorskogo
farmatsevticheskogo instituta.

AL'PERIN, P. M.; IVANOVA, N. A.; ZARKHIN, M. M.; STEPANOVA, A. V.

Liver function in anemias. Ter. arkh., Moskva 23 no. 6:56-69
Nov-Dec 1951. (CML 21:3)

1. Of the Hemotherapeutic Clinic (Head — Prof. M. S. Dul'tsin),
Central Institute of Hematology and Blood Transfusion, and of the
Hospital Therapeutic Clinic (Director — Prof. A. A. Bagdasarov,
Corresponding Member of the Academy of Medical Sciences USSR)
of the Pediatric Faculty of Second Moscow Medical Institute
imeni I. V. Stalin.

BONDARENKO, Ye.A.; STEPANOVA, A.V.

Some peculiarities of metal oxidation (from "Zeitschrift fur Metallkunde"
no. 46 1955). Metalloved. i obr. met. no.2:58-61 1957. (MIRA 10:4)
(Oxidation)

83241

9.2165

S/129/60/000/009/006/009
E193/E483

AUTHORS: Zakharov, M.V., Doctor of Technical Sciences, Professor.
Putsikin, G.G. and Stepanova, A.V., Candidates of
Technical Sciences and Vorontsova, L.A., Engineer

TITLE: High Conductivity, Heat-Resistant Copper-Base Alloys ²¹

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov,
1960, No.9, pp.25-29

TEXT: The object of the present investigation was to develop a copper-base alloy with electrical conductivity no lower than 90 to 95% of that of pure copper, yield point no less than 15 kg/mm² and elongation no less than 20 to 30%, the additional requirement being that the alloy should retain these properties after prolonged heating at 170 to 200°C. To this end, Cu-Ag, Cu-Cr, Cu-Zr, Cu-Cr-Cd and Cu-Cr-Zr alloys with various contents of the alloying additions, were examined. It was concluded that binary alloys containing 0.12% Cr or 0.2% Zr, and ternary alloys with 0.2% Cr and 0.15% Cd, or 0.15% Cr and 0.10% Zr, are most promising. The room temperature properties of these alloys are as follows: yield point - 16 to 23 kg/mm²; U.T.S. - 29 to 36 kg/mm²; elongation - 21 to 24%; conductivity - 88 to 95% of
Card 1/2

83241

S/129/60/000/009/006/009
E193/E483

High Conductivity, Heat-Resistant Copper-Base Alloys

that of copper grade M0. The alloys retain their properties after 1000 h at 200°C. Even at 220°C, the yield point of these alloys remains at 15 to 18 kg/mm², U.T.S. at 22 to 31 kg/mm² and elongation at 20 to 29%. It was concluded that the alloy containing 0.15 to 0.3% chromium should be first subjected to large-scale industrial tests, the alloy containing 0.15 to 0.2% Cr and 0.1 to 0.2% Zr being more suitable for critical applications in which the conducting elements operate at 250 to 350°C. There are 2 figures, 4 tables and 7 references: 3 Soviet and 4 English. ✓

Card 2/2

STEPANOVA, A. Ya., khudozhnik

Kaleidoscope of colors. Nauka i zhizn' 28 no.5:65-67 My '61.
(MIRA 14:6)

(Synthetic fabric--Exhibitions)

STEPANOVA, A.Ya.

Outlook for the development of the machinery industry in
Bulgaria. Mashinostroitel' no.6:42-43 Je '63. (MIRA 16:7)

(Bulgaria—Machinery industry)

STEPANOVA, B.I.; NEPORENTA, B.S.; ALENTSEVA, M.N.; PAKHOMICHEVA, L.A.

Discussions of the reports of B.I. Stepanov, B.S. Neporent,
M.N. Alentseva and L.A. Pakhomycheva. Izv. AN SSSR. Ser. fiz.
22 no. 11: 1379 N '58. (MIRA 11:12)
(Luminescence)

GUMENYUK, Ye.A., inzh.; KRUSHOL', L.Ye., kand. tekhn. nauk; STEPANOVA, Ch.A.,
inzh.

Possibility of expanding the supply of raw materials for the
production of faience tiles. Stek. i ker. 22 no.7:16-18 J1
'65. (MIRA 18:9)

1. L'vovskiy keramicheskoy zavod (for Gumenyuk). 2. L'vovskiy
filial Gosudarstvennogo nauchno-issledovatel'skogo instituta
stroitel'nykh materialov i izdeliy (for Krushol', Stepanova).

STEPANOVA, D.I., zasluzhennyy vrach Karel'skaya ASSR; OSTROVSKIY, A.G.

Case of treatment of severe arm injury. Ortop.travm.i protez.
no.6:65-66 '61. (MIRA 14:8)

1. Iz travmatologicheskogo otdeleniya (zav. - A.S. Vondarchuk)
gorodskoy bol'nitsy Petrozavodsk (glavnyy vrach - zasluzh.
vrach RSFSR M.D. Zhuralev).
(ARM—WOUNDS AND INJURIES)

BORTS, M.A., kand.tekhn.nauk; STEPANOVA, D.I., inzh.

Study of some conditions for using polyacrylamide. Obog.1
brik.ugl. no.27:38-48 '62. (MIRA 17:4)

BORTS, M.A.; STEPANOVA, D.I.; GERSHKOVICH, V.L.; MAKARUSHINA, M.I.;
FILIPISHIN, I.T.

Use of polyacrylamide in the filtration of slurry under pressure.
Koks i khim. no.12:3-6 '63. (MIRA 17:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy i proyektno-konstruk-
torskiy institut po obogashcheniyu i briketirovaniyu ugley (for
Borts, Stepanova). 2. Zhilevskaya OPOF Vsesoyuznogo nauchno-
issledovatel'skogo i proyektno-konstruktorskogo instituta po
obogashcheniyu i briketirovaniyu ugley (for Gershkovich,
Makarushina). 3. Bogurayevskaya opytная fabrika tsentrobezhnogo
obogashcheniya uglya (for Filipishin).

STEPANOVA, E., starshiy inspektor.

In the Pakhtaabad district center of the motion-picture network. Kino-
mekhanik no.7:5 J1 '53. (MLWA 6:8)

1. Upravleniye kinofikatsii Uzbekskoy SSR, Tashkent.
(Pakhtaabad--Moving-picture distribution) (Moving-picture distribution--
Pakhtaabad)

MAYZENBERG, Isaak Solomonovich; STEPANOVA, E.A., red.; GORKAVENKO, L.I.,
tekhn. red.

[Mechanism and repair of cameras] Ustroistvo i remont fotoap-
paratov. Kiev, Gos.izd-vo tekhn.lit-ry USSR, 1961. 317 p.
(MIRA 15:2)

(Cameras)

MAYZENBERG, Isaak Solomonovich; STEPANOVA, E.A., inzh., red.;
ROZUM, T.I., tekhn. red.

[Design and repair of cameras] Ustroistvo i remont foto-
apparatov. 3 izd., perer. i dop. Kiev, Gostekhizdat
USSR, 1963. 439 p. (MIRA 17:1)

... ..

Dissertation: "Phagocytic reaction in Typhoid fever in' in immunization of rabbits
With Typhoid fever Monovaccine." Cand Med Sci, First Leningrad Medical Inst,
Leningrad, 1954. Referativnyi zhurnal—Zhurnal, Moscow, No 1, Apr 54.

SC: SUH 284, 16 Nov 1954

ZAKHAROVA, M.S., LAPAYEVA, I., STEPANOVA, E.A.

The preparation and study of bordella pertussis protective antigen.

Report submitted to the Intl. Congress for Microbiology
Montreal, canada 19-25 Aug 1962

NIKONOVA, O.S.; STEPANOVA, E.A.

Cerebrovascular disorders in myocardial infarct; autopsy data.
Zhur.nevr. i psikh. vol. 64 no.5:667-669 '64. (MIRA 17:7)

1. Klinika nevnykh bolezney Tsentral'nogo instituta usovershenstvovaniya vrachey (zaveduyushchiy kafedroy - prof.N.S.Chetverikov) i nevnoye otdeleniye bol'nitsy im. S.P.Botkina, Moskva.

STEPANOVA, E.G., (Moskva).

Endometriosis of postoperative cicatrix. Akush.i gin. no.2:70-71 Mr-Ap '53
(MLRA 6:5)
(Endometriosis)

AUERMAN, L.Ya.; ZAPARINA, Ye.A.; STEPANOVA, E.I.; FEDOROVA, G.S.

Effect of various fats on bread quality. Izv.vys.ucheb.zav.pishch.
tekh. no.4:74-77 '58. (MIRA 11:11)

1. Moskovskiy tekhnologicheskiy institut pishchevoy promyshlennosti.
Kafedra tekhnologii khlebopekarnogo proizvodstva, Spetslaboratoriya
tekhnologii khlebopecheniya. (Bread) (Oils and fats, Edible)

SERGEYEVA, T.A., starshiy nauchnyy sotrudnik; STEPANCUVA, E.I., inzh.

Improving the technology of dyeing sheep pelts for coats. Kozh.-
obuv.prom. 4 no.2:24-27 F '62. (MIRA 15:4)

1. Nauchno-issledovatel'skiy institut mekhovoy promyshlennosti
(for Sergeyeva). (Fur--Dressing and dyeing)

BAIACH, L.V.; REKIN, G.I. [deceased]; STEPANOVA, E.Y.

Cytochemistry of acid-soluble nucleotides in acinous cells of the
pancreas during secretion. Arkh. anat., gist. i emb. 48 no.6 80-
81 1965. (MIR: 13:7)

Институт цитологии и гистологии, лаборатория цитологии и
гистохимии раковой клетки (зав. - проф. Г.И.Рекин [deceased])
Новосибирского государственного университета имени Ломоносова.

STEPANOVA, G.; KOSTENKO, E.; IOYIEVA, K.A., dotsent, nauchnyy rukovoditel'

Adsorptive properties of ferric oxide gels. Sbor. nauch. rab.
stud. Petrozav. gos. un. no.6:85-96 '62.

(MIRA 17:11)

1. Kafedra obshchey fiziki Petrozavodskogo gosudarstvennogo
universiteta.

VOROB'YEV, S.A., doktor sel'skokhozyaystvennykh nauk, prof.; STEPANVA,
G.A., aspirantka

Effect of some crops on the **dynamics** of organic substances in
turf-podzolic soils. Izv. TSKHA no.5:21-38 '62. (MIRA 16:7)

(Podzol) (Humus) (Crops and soils)

... staryiy nauchnyy sotrudnik, kand. sel'skokh. nauch.

Nitrogen balance during the cultivation of various crops in crop
rotations including flax. Izv. TSKEA no. 112-121 '64.

... Pamyennno-agronomicheskaya stantsiya Sel'skokhozyaystva
skadgali imeni Tim. ryazeva.

VITOL', R.K.; IOYLEVA, K.A.; STEPANOVA, G.A.; LAPIDES, I.L.

Adsorption properties of charcoal from coniferous and deciduous species growing in Karelia. Trudy Kar. fil. AN SSSR no.32:13-20 (MIRA 18:3) '63.

1. Petrozavodskiy gosudarstvennyy universitet (for Vitol', Ioyleva, Stepanova). 2. Institut lesa Karel'skogo filiala AN SSSR (for lapides).

STEPANOVA, Galiya Gabdrakhmanovna; GOLITSYNSKAYA, M.T., kand. med.
nauk, otv. red.; CHERKASHINA, M.R., tekhn. red.

[Arteriographic data on obliterating diseases of the arteries
of the lower extremities] Dannye arteriografii pri obliteri-
ruyushchikh zabolevaniyakh arterii nizhnikh konechnostei.
Uzhgorod, Zakarpatskoe obl. knizhno-gazetnoe izd-vo, 1962. 133 p.
(MIRA 15:9)

(ARTERIES. RADIOGRAPHY)
(EXTREMITIES, LOWER--DISEASES)

STEPANOVA, G.G.

Differential diagnosis of obliterating diseases of the arteries
of the leg. Vest.Khir. 84 no.6:11-14 Je '60. (MIRA 13:12)
(ARTERIES—DISEASES) (LEG—BLOOD SUPPLY)

STEPANOVA, G.G., kandidat tekhnicheskikh nauk

Obtaining of detergents of the alkylarylsulfonate type from paraffin hydrocarbons of shale oil. In Russian. Eesti tead akad tehn fuus 10 no.1:40-48 '61. (KEAI 10:7)

1. Institut khimii Akademii nauk Estonskoy SSR.
(Cleaning compounds) (Shale) (Alkyl groups)
(Aryl groups) (Sulfonates) (Paraffins) (Hydrocarbons)

SPITSYN, Vikt.I.; TORCHENKOVA, Ye.A.; STEPANOVA, G.G.

Cerium molybdate method for determining radioactive cesium.
Atom. energ. 15 no.6:519-520 D '63. (MIRA 17:1)

VOORE, H.; KORV, M.; KUDRYAVTSEV, I.B.; RIKKEN, V.; STEPANOVA, G.G.;
TOMSON, T.; TOMSON, R.; FAYNGOL'D, S.I.; BLONBERG, M., red.

[Synthetic detergents from shale oil] Sinteticheskie moiushchie veshchestva iz slantsevoi smoly. [By] Kh.IU.Voore i dr.
Tallin, Estgosizdat, 1964. 257 p. (MIRA 17:5)
1. Eesti NSV Teaduste Akadeemia. Keemia Instituut.

TORCHENKOVA, Ye.A.; STEPANOVA, G.G.; SPITSYN, Vikt.I., akademik

Interaction of rare earths with cerium mol; bdenum heteropoly
compounds. Dokl. AN SSSR 157 no.5:1167-1170 Ag '64.
(MIRA 17:9)

1. Institut fizicheskoy khimii AN SSSR.

L 40733-65 EWT(m)/EPF(c)/EPF(n)-2/ENP(j)/T/ENP(t)/ENP(h) Pc-4/Pr-4/Pu-4

TJP(c) JD/JG/RM

ACCESSION NR: AP5012395

UR/0020/64/157/005/1167/1170

AUTHOR: Torchenkova, Ye. A.; Stepanova, G. G.; Spitsyn, Vikt. I. (Academician) 36
35

TITLE: Interaction of the rare earths with cerium-molybdenum heteropoly-compounds B
7

SOURCE: AN SSSR. Koklady, v. 157, no. 5, 1964, 1167-1170

TOPIC TAGS: rare earth metal, cerium compound, molybdenum compound, physical chemistry

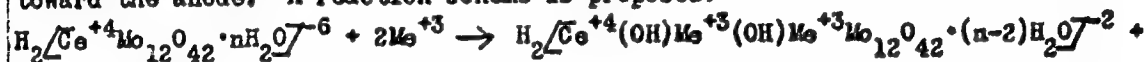
Abstract: The addition of cerimolybdic acid to solutions of trivalent rare earths revealed different behaviors of the cerium and yttrium groups: in the case of salts of lanthanum or trivalent elements of the cerium group, a yellow precipitate, soluble in an excess of the heteropoly-acid, was formed; salts of elements of the yttrium group gave no precipitates with the freshly prepared heteropoly-acid at any ratio of the reagents, but a definite weakening of the color intensity of cerimolybdic acid was visually observed. The composition of the salt precipitates was independent of the ratio of the initial reagents: $1.5 \text{ MoO}_3 \cdot \text{CeO}_2 \cdot 12 \text{ MoO}_3 \cdot n \text{ H}_2\text{O}$. The interaction of cerimolybdic acid with the elements of the cerium and yttrium groups was studied using a number of physical-chemical methods: amperometric titration on a dropping mercury electrode; study of the absorption spectrum in the

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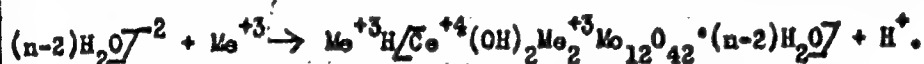
L 40733-65

ACCESSION NR: AP5012395

region from 250 to 350 millimicrons. The formation of the compound at the ratio $Me^{+3}:CMA = 2:1$ (CMA: cerimolybdic acid) was revealed by investigations of the optical density at 350 millimicrons and by the pH variation in the system ammonium cerimolybdate - Y - $(NO_3)_3 - H_2O$. The method of electro-migration revealed that Ce^{+3} in a mixture with ammonium cerimolybdate moves toward the anode. A reaction scheme is proposed:



$2H^+$; the third atom of the rare earth element of the cerium group forms a sparingly soluble salt with the polynuclear anion: $H_2[Ce^{+4}(OH)_2Me_2^{+3} \cdot Mo_{12}O_{42} \cdot$



Orig. art. has 1 table and 4 graphs.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, Academy of Sciences, SSSR)

SUBMITTED: 14Apr64

ENCL: 00

SUB CODE: MM, GC

NO REF SOV: 004

OTHER: 004

JPRS

Card 2/2

USSR/Physical Chemistry - Crystals, B-5

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 190

Author: Lifshits, I. M., and Stepanova, G. I.

Institution: Lvov University

Title: On the Energy Spectrum of the Oscillations of Random Crystals

Original

Periodical: Fiz. sb. L'vovsk. un-ta, 1955, Vol 1, No 6, 84-94

Abstract: A method is proposed for the calculation of the spectral intensity of the oscillations of the atoms of a lattice composed of different isotopes of the same element. An idealized simple lattice is discussed in which all the oscillations occur in the same direction.

Card 1/1

MIFSHITS, I.M.; STEPANOVA, G.I.

Energy spectrum of vibrations of nonordered crystals. Nauk. zap. L'viv.
un. 33:84-94 '55. (MLRA 10:6)

(Crystal lattices)

STEPANOVA, G.I.

Category : USSR/Solid State Physics - Morphology of Crystals. Crystallization

E-7

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1296

Author : Aleksandrov, B.N., Verkin, B.I., Lifshits, I.M., Stepanova, G.I.

Inst : Physical-Technical Inst. Academy of Sciences Ukrainian SSR.

Title : Investigation of The Mechanism for Cleaning Metals of Admixtures Using the Zonal-Recrystallization Method

Orig Pub : Fiz. metallov i metallovedeniye, 1956, 2, No 1, 105-119

Abstract : A detailed theoretical and experimental study is made (using alloys of the Pb-Sn¹¹³ and Sn-Bi systems) of the mechanism for purifying metals by the zonal-recrystallization method. The impurity distribution was studied by measuring the activity of specimens, taken from various parts of the ingot, or by using the contrast-radiography or the residual-resistance methods. The role of the absence of equilibrium on the crystallization boundary and the role of diffusion and convective displacement in the zone are examined.

Card : 1/1

STEPANOVA, G.I.

LIFSHITS, I.M.; STEPANOVA, G.I.

Oscillation spectrum of nonordered crystal lattices. Zhur.eksp. i teor.
fiz. 30 no.5:938-946 My '56. (MIRA 9:9)

1.Fiziko-tekhnicheskii institut Akademii nauk Ukrainskoy SSR.
(Crystal lattices)

STEFANOVA, G.I.

1735. THE EFFECT OF ORDERING ON THE ENERGY SPECTRUM
OF PHONONS. ²⁴ L.M. Lifshits and G.I. Stefanova
Zh. eksper. teor. Fiz., Vol. 31, No. 1(1), 156-7 (1956). In Russian.
The method of Absir. 7814/1956 was used to determine the
spectral density of solid solutions of two isotopes with a small mass
difference for various degrees of lattice ordering. J.B.Arthur

548.7 : 539.219

24
1-gum

Prof J. Arthur

STEPANOVA, G. I.

AUTHOR: STEPANOVA, G. I., BUSOL, F. I. 89-10-19/36
TITLE: On Refining of Zirconium by the Iodide Method (K voprosu ob
iodidnom metode ochistki tsirkoniya)
PERIODICAL: Atomnaya Energiya, 1957, Vol 3, Nr 10, pp 344-346 (USSR)
ABSTRACT: A new explanation of the dependence of the zirconium flux on the
pressure of the tetraiodides which is used for the purpose of
purification of zirconium, is theoretically derived. A proof of
this theory is to be furnished in the near future by experimental
investigations. There is 1 Slavic reference.

SUBMITTED: August 1, 1956
AVAILABLE: Library of Congress

Card 1/1

LIPSHITS, I.M.; STEPANOVA, G.I.

Thermodynamics of isotope solutions. Probl. kin. 1 kat. 9:354-359
'57. (MIRA 11:3)
(Thermodynamics) (Solution (Chemistry)) (Isotopes)

ИПАНОВ, Л. Л., СТЕПАНОВА, Г. Л.

"The Thermodynamics of Solutions of Isotopes."

Problems Kinetics and Catalysis, v. 9, Isotopes in Catalysis, Moscow, Izd-vo AN SSSR, 1957, 142p.

Most of the papers in this collection were presented at the Conf. on Isotopes in Catalysis which took place in Moscow, Mar 31- Apr 5, 1956.

STANINOV, G. I.

AUTHORS: Lifshits, I. M., Stepanova, G. I., 56-2-25/47

TITLE: A Note on the Correlation in Solid Solutions (Korrelyatsiya v tverdykh rastvorakh)

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 2(8), pp. 485-494, (USSR)

ABSTRACT: The present paper develops a method for the description of non-equilibrium states of solid solutions with the specification of a system of correlation functions for the dissolved atoms, with the help of the method developed here the free energy of the solution in the state of "particular equilibrium" can be computed. At the outset a formula is given for the free energy corresponding to equilibrium state. The free energy of a solid solution is a functional of the interaction of two, three... admixture electrons. The free energy can also be represented as a functional of pair interactions and polarization corrections of third, forth...etc order. From the expression obtained in this way for the free energy the chemical potentials of the solvent and the dissolved substance can be derived without difficulty. The next chapter deals with non-equilibrium states of solid solutions, at the same time the free energy, the entropy and the correlation functions are computed. The authors determine as an example an explicit expression for the non equilibrium free energy, if the nonequilibrium state results from tempering of the solution. The existence of a corre-

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A Note on the Correlation in Solid Solutions.

56-2-25/47

lation causes the non-ideal form of the solutions of isotopes. When the interaction is sufficient for the decomposition of the solution, the existence of correlation can be observed by studying the scattering of slow neutrons. There are no figures and references.

ASSOCIATION: Physics Institute, AN of the Ukrainian SSR (Fizicheskiy institut Akademii nauk Ukrainskoy. SSR)

SUBMITTED: February 21, 1957, after revision April 17, 1957

Card 2/2